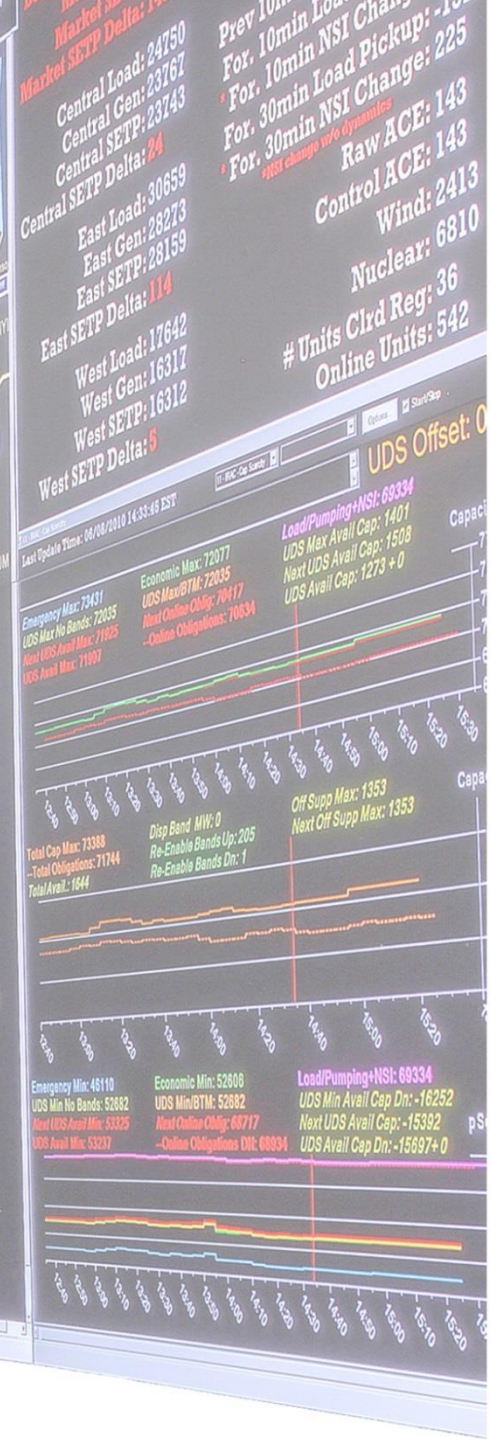




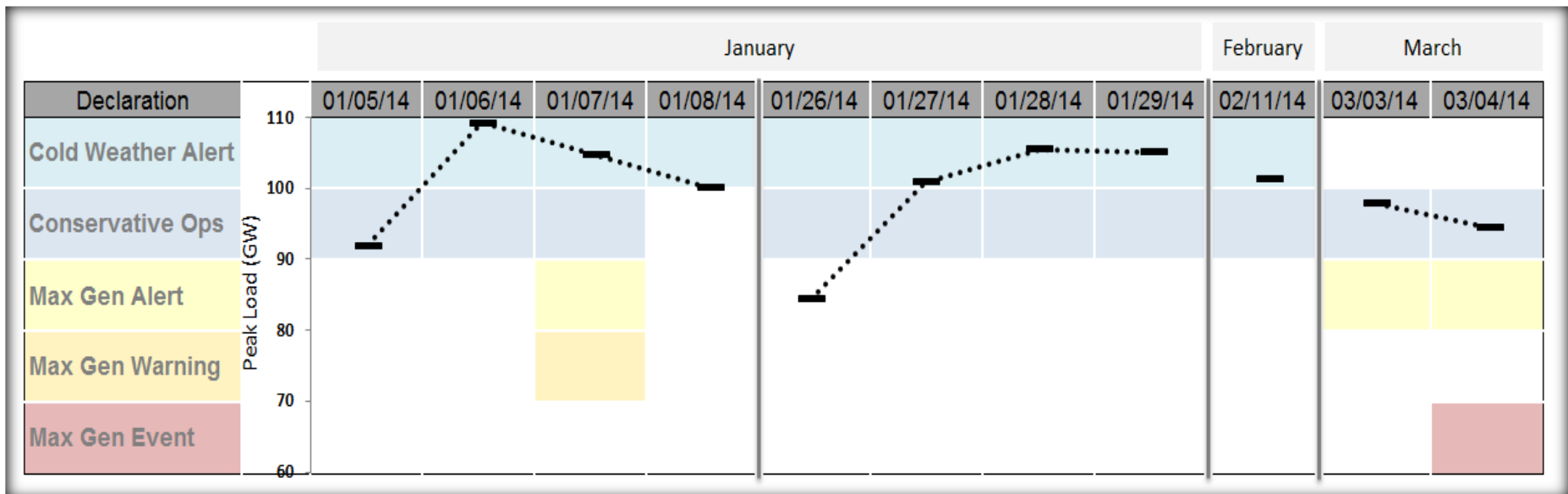
Illinois Commerce Commission Electric-Natural Gas Policy Session 2014-2015 Winter Preparedness October 2014



Electric-Natural Gas Coordination: 2014-2015 Winter Preparedness

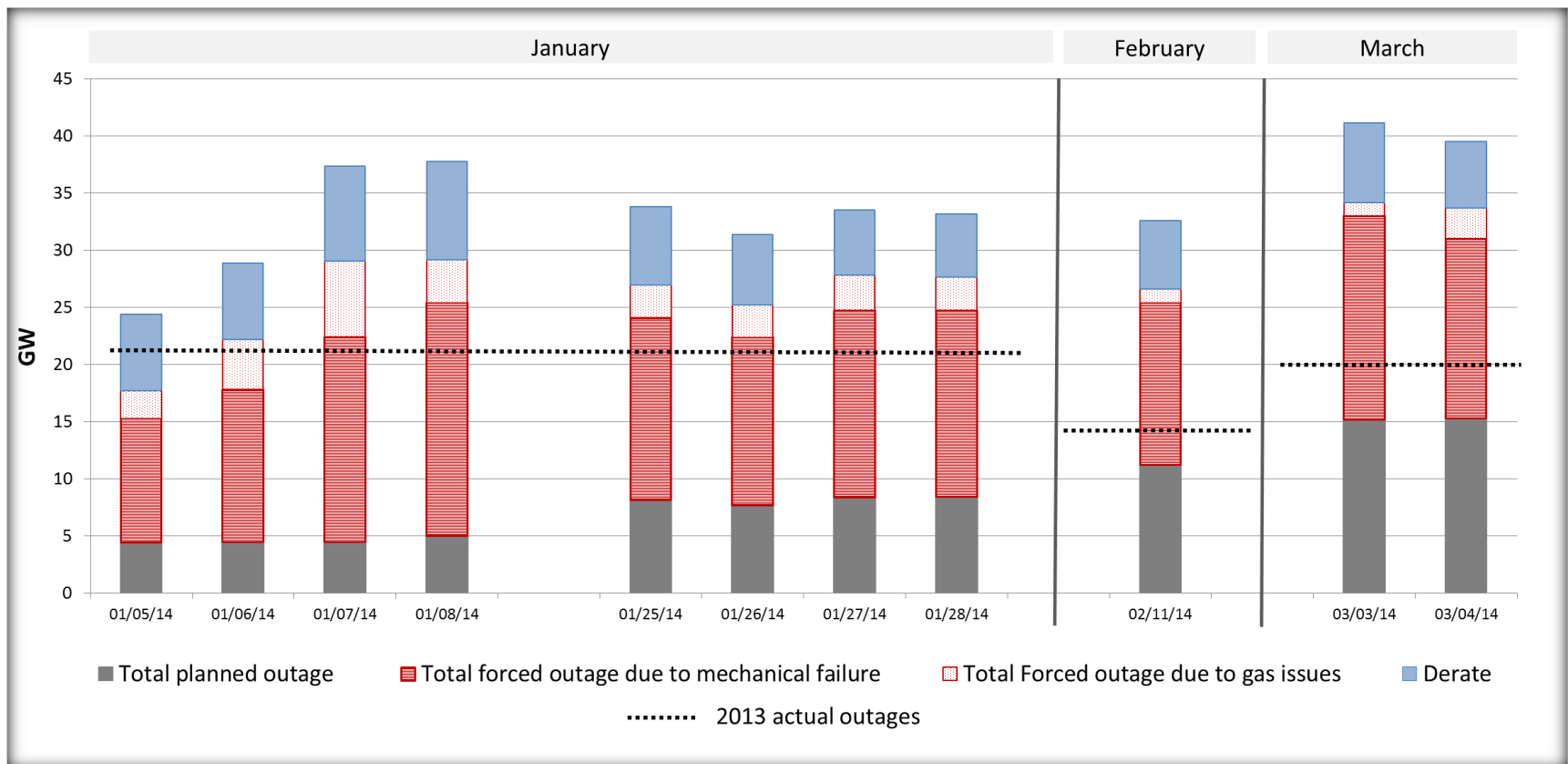
- Have appropriate adjustments been made in the coordination between gas and electricity markets to avoid some of the problems experienced last winter?
- What challenges are the RTOs facing with respect to assuring electric reliability during the 2014-2015 winter months and how are they addressing those challenges?

Event Summary



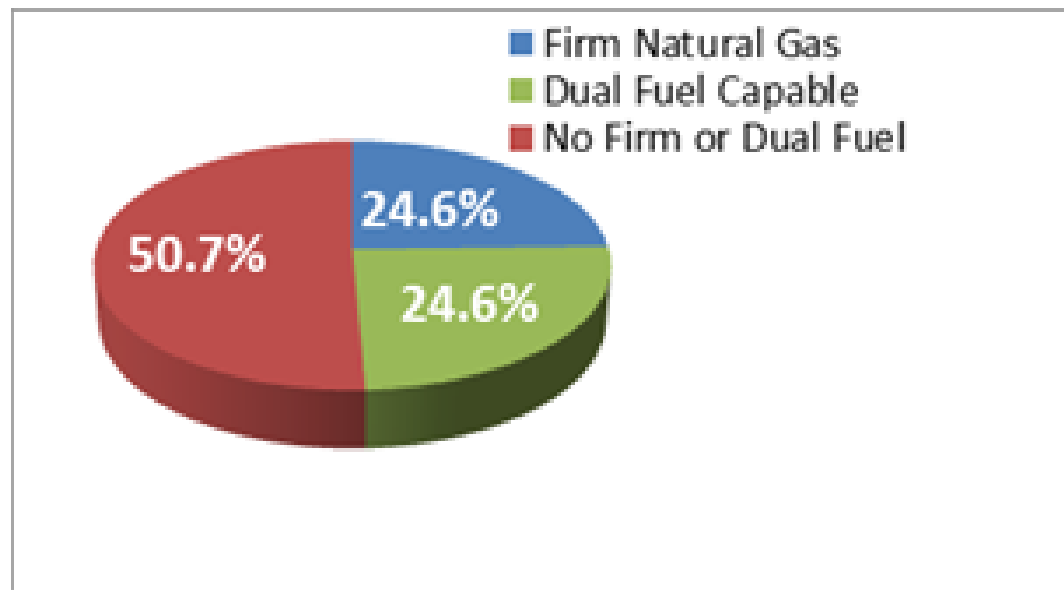
A new all-time winter market peak load was set on January 6th of 109.3 GW, over 9% higher than the prior winter peak for MISO's current membership of 99.8 GW.

The number of forced outages escalated as the severe weather conditions moved into the footprint. These outages created unit commitment challenges during peak conditions.



Firm vs. Non-Firm Gas Service

- **69 GW of Gas Fired Generation**
 - 17 GW w/ Firm Gas
 - 17 GW Dual Fuel Capability
 - 35 GW w/o Firm Gas or Dual Fuel Capability



Winter Preparedness



MISO's Lessons Learned

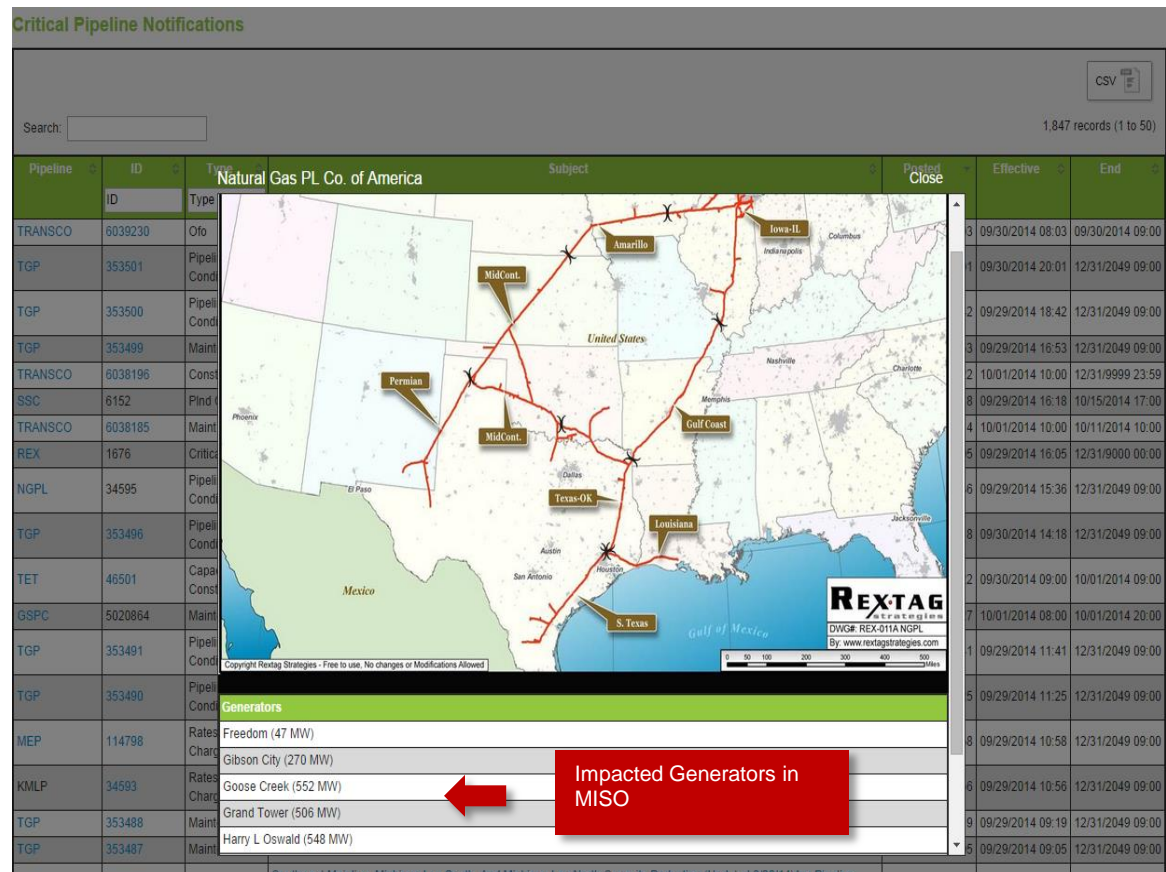
- Electric-Gas Coordination
- Demand Response Resources
- Communications/Procedures
- Unit Performance
- Market Performance

Issue Statement- Electric Gas Coordination

Continued and improved coordination between the electric industry and natural gas industry is needed to ensure we effectively manage system assets.

Efforts Underway:

- *Electric-Gas Coordination Field Trial*
- *Website for Gas Pipeline critical notices and RT Display of gas pipelines*
- *Evaluating alignment of Electric-Gas operating day*



Issue Statement- Demand Response Resources

Additional information regarding Demand Response availability is necessary to better understand seasonal variations.

Efforts Underway:

- *Voluntary Load Management (VLM) reporting enhancements implemented in June 2014 – should improve visibility for current and future operating days*
- *Evaluating seasonal variations in resource availability to determine if future market enhancements are necessary*

Issue Statement- Communications Protocols

Emergency procedures and tool performance needs to be enhanced to provide better coordination with neighboring entities during emergency conditions.

Efforts Underway:

- *Review of Emergency Operating Procedures including:*
- *Coordinating with neighboring entities on Emergency Operating Procedure reviews*
- *Evaluation of tool performance*
 - *Leverage Look Ahead Commitment (LAC) results for Capacity Emergencies*
- *In order to perform accurate post-event analysis, reporting of the specificity of unit outage and de-rate cause types is essential.*

Issue Statement- Unit Performance

The level of uncertainty in unit performance suggests our unit commitment process and plans should be reassessed to determine potential areas for improvement.

Efforts Underway:

- *Electric-Gas Coordination –improve fuel restriction situational awareness*
- *Balancing Authority (BA) Unit Commitment – Increased Reliability Margin (headroom) during Cold Weather Events*
- *Post Annual Reminders to prepare for cold weather and address mechanical failures*
- *Evaluate Market Solutions – Winter Testing*

Issue Statement- Market Performance

Market pricing improvements during emergency conditions are necessary to ensure market signals are not distorted but reflective of actual system operating conditions and system marginal cost. Market pricing should also influence efficient behavior by generators, load and interchange.

Efforts Underway:

- **Extended Locational Marginal Pricing**
 - Allows Emergency Demand Response resources to set price
- **Design of Pricing under Emergency Conditions-**
 - Offer Price Adjustments for Load Modifying Resources
 - Offer Price Adjustments for Module E External Resources
 - Offer Price Adjustments for Generators dispatch range between Economic Maximum and Emergency Maximum
- **Evaluation of Offer Cap**
 - Review \$1,000 offer cap
 - Evaluate long term market solution
 - Be prepared for Emergency waiver
- **Evaluation of Value of Lost Load (VOLL) Pricing**
 - Review \$3,500 VOLL

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